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December 8, 1982

Mr. Donald Thimsen, P.E.
Manager, Environmental Engineering
Engineering Policy
General Mills, Inc.
P.O. Box 1113
Minneapolis, Minnesota 55440

Dear Mr. Thimsen:

This letter summarizes the status of the hydrogeologic investigation of the former waste disposal site on the Henkel property and provides recommendations for further monitoring. The five new Platteville piezometers have been installed as recommended in our August 13, 1982 letter to General Mills. The locations of the new wells were moved slightly to avoid problems with utilities and at the request of property owners. The locations of the new piezometers are shown in Figure 1 accompanying this letter. As you know, the placement of the piezometers took much longer than expected (1-2 weeks per piezometer) due to the need to use 6-inch diameter casing and due to the bouldery drift that was encountered.

Piezometers SS, UU, and WW are in the Carimona Member of the Platteville Formation, while Piezometers TT and VV are in the Magnolia Member. Piezometers YY and ZZ were not installed. The direction of groundwater movement in the new piezometers has been measured using the Geoflow instrument. Groundwater direction could not be measured in older Platteville piezometers since the diameter of the riser pipe and screen is too small for the Geoflow instrument.

The Platteville water levels and the measured directions of groundwater movement in the Carimona and Magnolia Members are shown in Figures 2 and 3, respectively. Surficial water levels were again measured in the shallow monitoring piezometers and sampling wells and the levels and resulting water table contours are shown in Figure 4.

The data show that groundwater gradients are very flat in the Carimona Member of the Platteville. No flow could be discerned through Piezometers SS and UU using the Geoflow instrument. Groundwater levels are much more variable in the Magnolia Member. Flow measurements showed flow to the south-southwest at Piezometers TT and VV. Although this flow direction is not consistent with the gradients shown by the groundwater level measurements, it is likely that the flow in the Magnolia (as well as in the Carimona) is

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through fractured zones and solution channels. For this reason groundwater level measurements cannot be used to determine the direction of groundwater movement with any confidence.

As the final step in this phase of the investigation, we will collect water samples from the new Platteville piezometers and from the old Platteville piezometers that are finished in either the Magnolia or the Carimona Members to obtain more complete information on the distribution of volatile organic compounds in the Platteville. Samples will also be collected from Surficial Piezometers A and B to determine the concentrations of volatile organic compounds in the shallow groundwater overlying Platteville Piezometer BB. As you recall, the initial sample from Piezometer BB showed an elevated trichloroethylene concentration. The somewhat elevated water level in Platteville Piezometer BB may indicate that groundwater is leaking from the overlying surficial aquifer to the Platteville through the annulus of the boring used to place this piezometer. This would explain the higher than expected concentration of trichloroethylene in the Platteville measured at this piezometer.

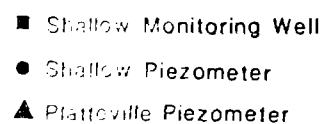
The samples will be collected during the next two to three weeks and the results should be available by the middle of January. After the results are available, we recommend that a meeting be held with the MPCA Solid and Hazardous Waste Division staff to discuss the results of the investigation and to discuss a plan for investigating the feasibility of various remedial measures.

Please contact me if you have any questions.

Sincerely,

Allan Gebhard

AG/tmn
Enclosure



LOCATIONS OF WELLS AND PIEZOMETERS

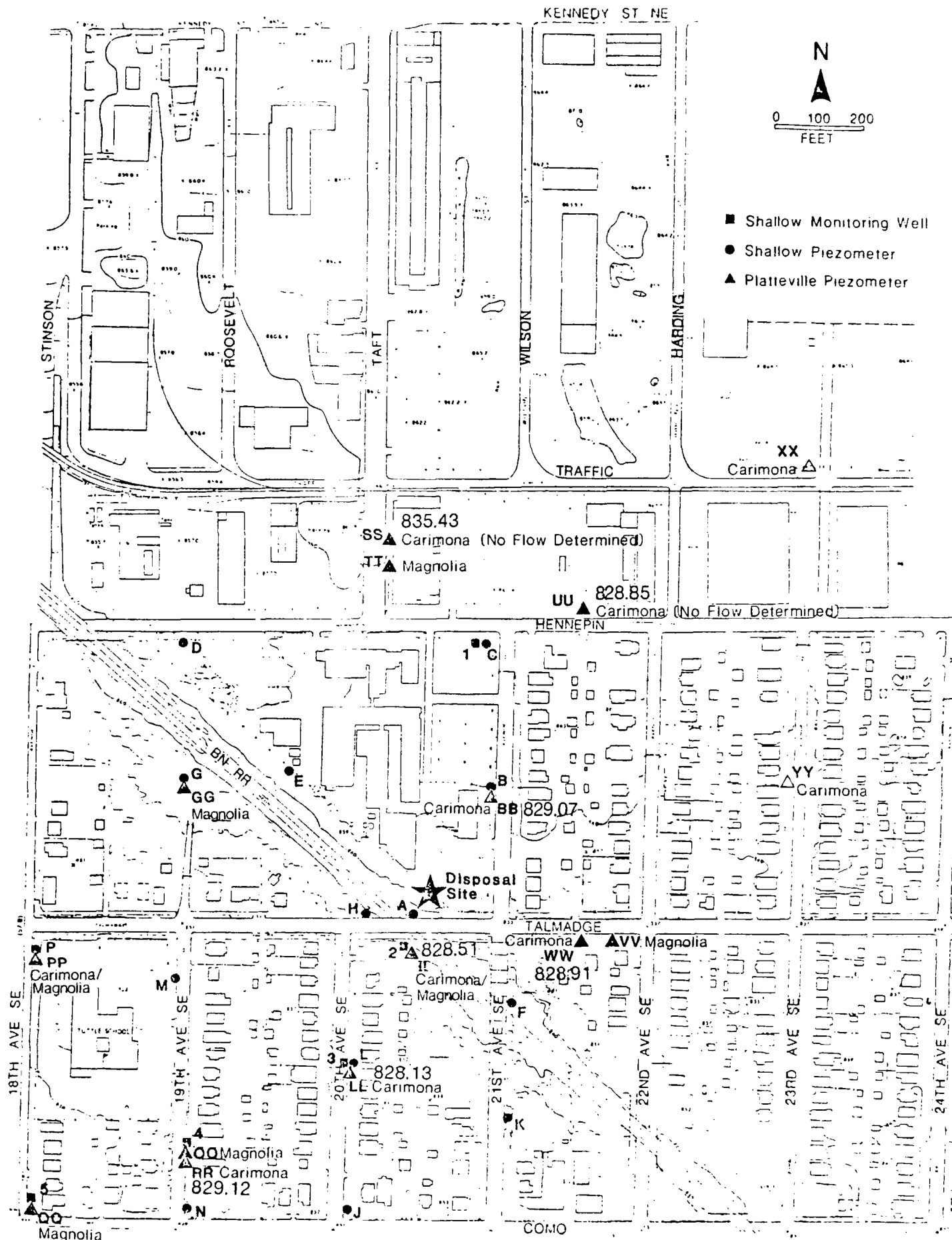


Figure 2

WATER LEVELS (MSL)
CARIMONA MEMBER
(November, 1932)

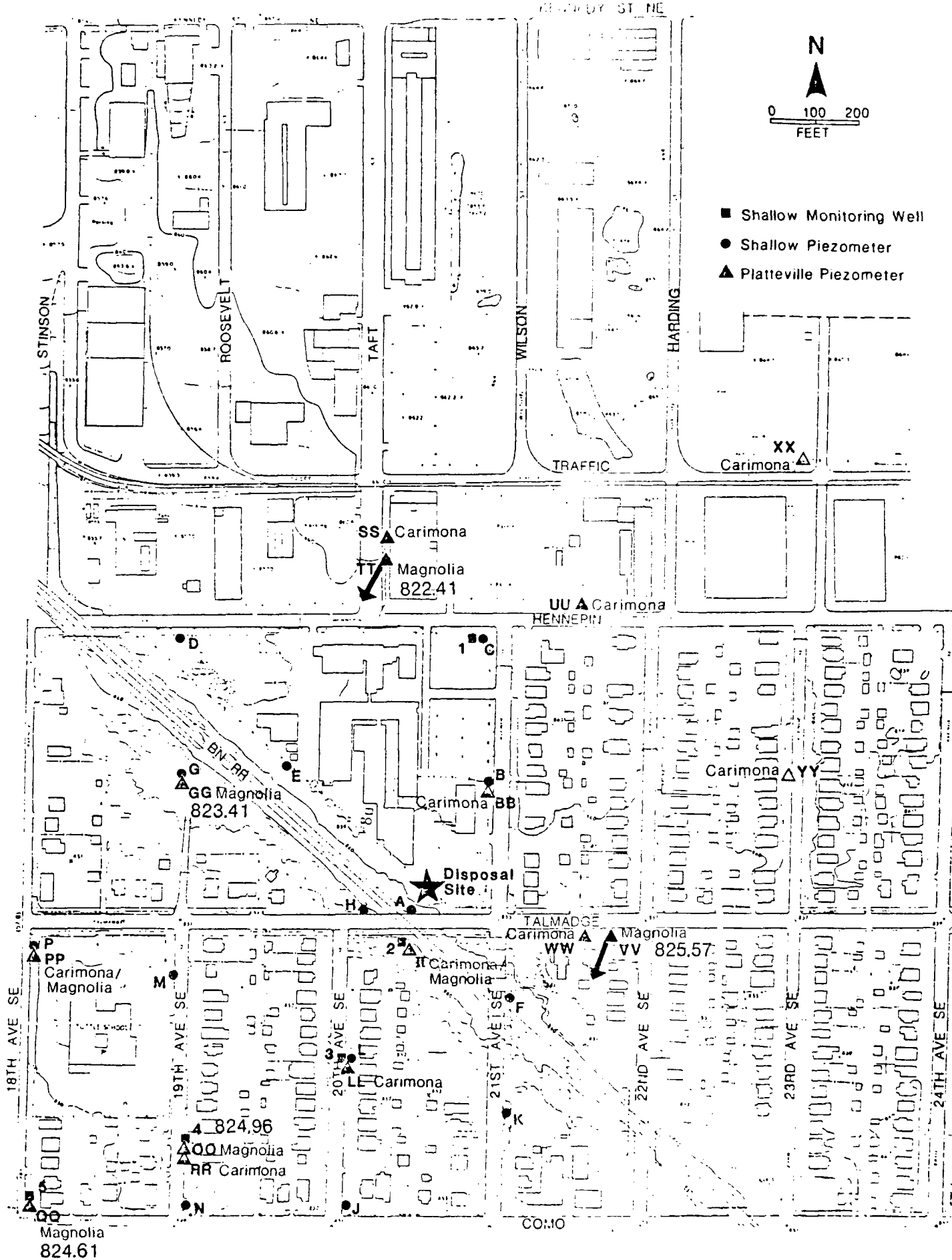


Figure 3

WATER LEVELS (MSL)
MAGNOLIA MEMBER
(November, 1982)

Direction of Groundwater Movement
Detected by Geoflow

